

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001161**Date Inspected:** 31-Jan-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower and OBG Fabrication**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Orthotropic Box Girder (OBG) and Tower Mock Up:

CWI Inspector: Xu Xian Ping, Wu Ming Kai, Zhong Hai, Yi Ru

Bay 2:

The QA Inspector observed ZPMC welder Mr. Ziang stencil 66155 is using welding procedure WPS-B-T-4313-TC-P5-1 using the shielded metal arc process for partial penetration groove weld on MUSB-MA89 skin C weld #E/F21. The QA Inspector observed E7018, 4.0 mm diameter electrodes, a welding current of approximately 190 amps and a minimum base material preheat temperature of 180° C. Items observed by the QA Inspector appear to comply with project specifications.

Bay 3:

The QA Inspector observed ZPMC welder Mr. Wei Dashuai stencil 51246 is using welding procedure specification WPS-B-T-2232-2 using the flux cored welding process for fillet tack welds on OBG stiffener welds

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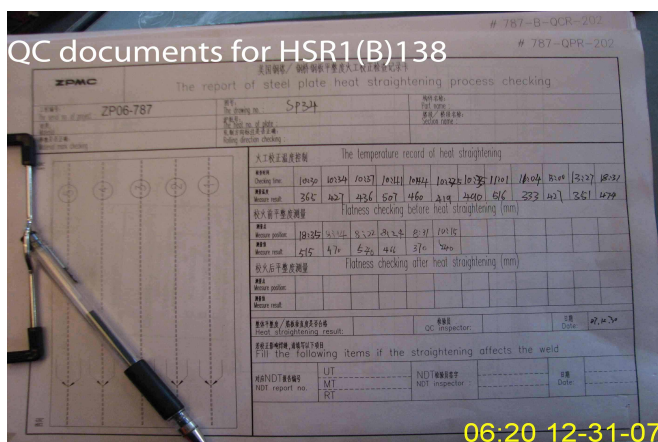
SP078-01-013 and SP078-01-014. The QA Inspector observed 1.4 mm diameter E71T-1 welding electrode with a welding current of approximately 295 amps, 27.0 volts and the base material has a minimum preheat of 60° C. The WPS lists a minimum of 27.2 volts and Mr. Dashuai is welding approximately 0.2 volts below this welding procedure specification low limit. The QA Inspector informed CWI Mr. Wu Ming Kai that QC Inspector Mr. Li Peng Fei, who is not a CWI, does not appear to be aware that the welding voltage is too low. Mr. Ming Kai showed Mr. Li Peng Fei the welding specification welding current and voltage limits that are listed in the WPS. Mr. Wu Ming Kai had Mr. Dashuai's welding voltage increased to 28 volts. Items observed by the QA Inspector do not appear to fully comply with project specifications.

QA Inspector observed ZPMC welder Ms. He Yu Mei stencil 48625 is using welding procedure specification WPS-B-T-2132-2 using the flux cored welding process for fillet tack welds on OBG side plate SP074 stiffener welds SP074-01-005 and SP074-01-006. The QA Inspector observed a welding current of approximately 280 amps, 28.0 volts and the base material has a minimum preheat temperature of 60° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Zhang Feng stencil 49769 is using welding procedure WPS-B-P-2312-TC-P4 using the flux cored welding process for fillet tack welds on side plate SP033 weld SP033-01-007 and SP033-01-008. The QA Inspector observed arc E7018 4.0 mm diameter electrodes, a welding current of approximately 185 amps and a minimum base material preheat temperature of 60° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC QC CWI Inspector Mr. Wu Ming Kai performing visual inspection of PL108A side plate SP-015-01-007 and SP-015-01-007. As of the end of this QA Inspector's work shift ZPMC personnel were performing grinding of various weld locations and all of the welds do not appear to have been accepted by Mr. Kai.

The QA Inspector observed ZPMC personnel perform heat straightening of OBG side plate SP034 as directed by HSR1(B)-138. This plate contains welds SP034-01-01 through SP034-01-010. The QA inspector observed Quality Control Inspector Mr. Zhang Qiang monitoring the heat temperature using a laser indicating device. No weights were placed on this plate during this flame straightening. This work is taking place on an elevated platform approximately six feet above the adjacent floor. Items observed appear to comply with the requirements of HSR1(B)-138. See the photographs below for additional information.



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### Summary of Conversations:

See above for summary of conversations.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Cochran,Jim	QA Reviewer

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